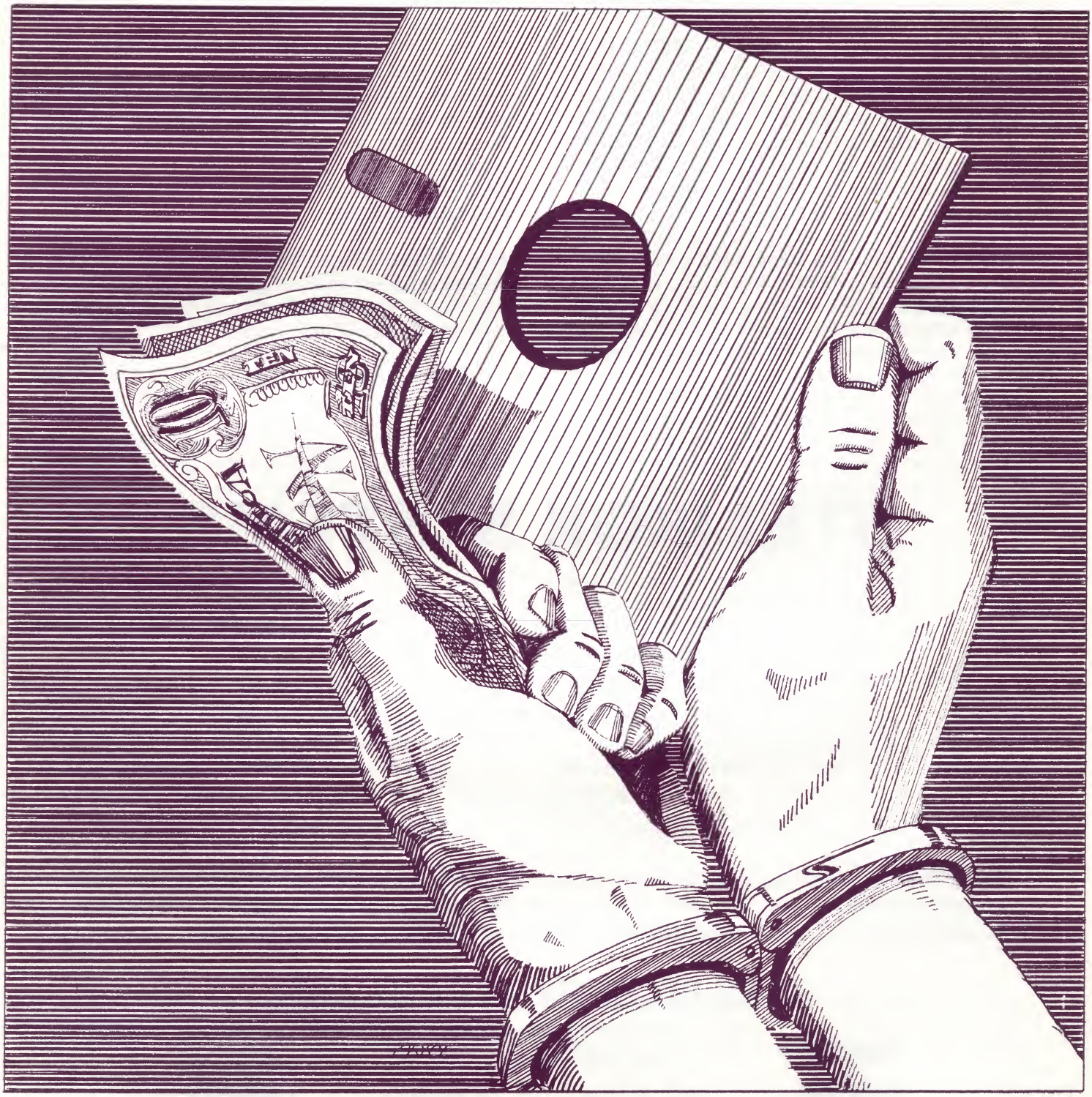
$2.25
May, 1984
Vol. 4 NO. 5

M.A.C.E. JOURNAL

"Devoted Exclusively To The Atari Computer User"



Published by the Michigan Atari Computer Enthusiasts

EDITORIAL

By Marshall S. Dubin

First of all I must give a long over due THANK-YOU! to GEORGE PRICE, our cover artist. George has generously provided us with those neat front covers we have been enjoying in the last few months.for the last several months. Again, our warmest thanks!

Now that we are beginning to get more submissions, hopefully our newsletter will stay an appreciable size. Basically the two things that keep us going is the number and quality of article submissions, and the amount of advertising we can sell. As you know, the advertisers help pay for this newsletter. That is one reason that we are able to provide you with such a high quality journal. BUT the CONTENT, dear friends depends on you. I am sure you would prefer a small, useful periodical each month rather than a huge, fancy version consisting mostly of filler. So keep the articles comming! (As always, many thanks to the people who DO contribute material.)

There is now a MACE Kid's Tape volume 1 and 2 in the tape library. These tapes contain many of the same games and educational activities found in the MACE Kid's disk. Please note, however that these programs may already exist on other MACE library tapes. The Kid's tapes are an anthology (as is the kid's disk) of programs culled from the libraries and put on a separate media for convenience. See the Tape Librarian if you are interested in these tapes.

I am trying to assemble a series of MACE journal reprints. I am hoping to compile reprint sets in Telecommunications, Games, Graphics, etc. Anyone with some nice original material in these areas wanting to contrinute some extra added bonuses to the reprints, please contact me.

And, oh yeah...I got 116,000 on Wizard of Wor, playing against the computer. I'll bask in my glory until the 5 year old kid down the block tells me he has doubled that!

Happy Spring! Keep Smiling.

This month from

STELIKOR SYSTEMS

MPP 1000C Modem	$129.95
Hayes Smartmodem 300	$225.00
Prometheus Pro Modem 1200	$409.95
Volks Modem (300 baud)	$ 64.95
Volks Modem Cable (No interf. req.)	$ 32.00
Indus GT Drive	$360.00
Rana 1000 Drive	$325.00

And even more.

Quantities are limited. Prices are exclusive of shipping and taxes.

We're Stelikor. *We're mail and telephone order exclusively.* And we've got everything you want in computer supplies: name-brand, quality products; prompt, courteous service; and low, low prices. In fact, *we'll beat all published prices around!* Don't buy until you talk to us.

STELIKOR SYSTEMS, INC.

19777 W. 12 Mile Road, #104
Southfield, Michigan 48076

VISA MasterCard

313/541-6020

Computer Software Piracy

Ravaging Program Shelf Life

By Mark Trost

[Ed note: this article was taken from Consumer Electronics Show Daily, Saturday, Jan.7, 1984. I recently met a person at a local computer store who felt it was his God-given right to purchase a piece of software, copy it to his liking after cracking the protection schemes, and then return it as "un-usable". Too bad, because the bone head wont be reading this article.]

It may never happen in the movies, but in the computer software industry the bad guys are winning. Program piracy is running amok, with an estimated $200 million to $500 million in wholesale revenues lost due to bootlegging each year. To the dealer, piracy can mean a loss of hundreds of program sales every month--software suppliers say that for every legitimate program sold, up to 10 pirated copies are made.

Although the problem is acute, no one seems to be doing much about it. Claiming they have little time to worry about the problem, software publishershave yet to make a single concentrated effort to curb even the most blatant acts of illegal duplication. Pretty ironic, particularly when you consider that software firms admit the problem is exacting a heavy toll in lost sales and shortened program life.

"We probably spend all of one minute a month fretting about piracy," says Mike Katz, president of Epyx, considered one of the leading computer game suppliers. "Right now it's just a low priority. We're busy attempting to maximize our growth through the developement of new and innovative products. The time to start worrying about piracy's effects on sales is when the market is saturated, and the only growth obtainable is by eliminating those illegal siphoning off the profits."

Katz's surprising comments are echoed throughout the industry. "We haven't learned to live with it, but at this stage of the game it doesn't pay to expend all your energies fighting it," says Creative Software marketing director Eliot Dahan. "If someone wants to make a copy of your game bad enough, they will do it no matter how many anti-piracy measures you enact. To them, half the fun is breaking the program's protection. We're not abdicating the burden of fighting piracy, particularly since we're already seeing how piracy is cutting months off a program's sales life, but we're in a situation now that just doesn't allow us to take the time to do battle. Perhaps when the industry settles down and the publishers aren't at each others throats something can be devised. Today, I don't think you could get a group of software manufacturers together to agree on anything, even how to stop piracy."

Tough It Out

Fortunately there are a few software firms refusing to give away half of their hard-fought business to bootleggers, particularly to those who make no bones about their piratical intentions.

As Dahan mentioned, among the most common protection techniques is an anti-duplicating code written into many programs. While no code is foolproof, they are getting more sophisticated. Among the most recent--and effective--anti-piracy programs is Vault Corporation's Prolok and Formaster's CopyLock. Both packages "fingerprint" the original software, instructing the disk drive to search for the fingerprint before the program can run. If the program is copied, Dahan explains, the fingerprint remains on the original only, leaving the copy inaccessible.

Not satisfied with commercially available anti-theft programs, some manufacturers have beefed up their own search for the ultimate fail-safe program. "We have three people on staff working on program protection," says Datasoft marketing and sales director Scott Llewellyn. "At this point, that's basically all we can do to protect ourselves and the dealer. But I've yet to find any copyguard system which can't be broken within thirty days of a program's release."

Ironically, some manufacturers have realized that even if they were to devise the unbreakable copy--particularly of more

expensive programs--far outweighs the desirability of making the program hard to duplicate. "If you copyguard a piece of software so the legitimate buyer can't make a copy for himself," says Denny Mosier, marketing manager for Continental Software, "you're going to have one angry consumer. If he/she has just paid $75, $100, or even $400 for a piece of software, can't make a safety duplicate and accidentally erases the original, the purchaser has nothing. So allowing the consumer to make back-ups," he notes, "is very important."

Since anti-piracy software has in fact been found to be easily defeated and often detrimental to legitimate sales, some manufacturers have taken other means to thwart the pirates, primarily through COURT ACTION.

Book 'Em

MicroPro, makers of best-selling business, game and home management software, is one of the most aggressive pirate hunters. One of the firm's earlier crusades led it to a quarter million dollar settlement against a California company, and the software firm is now tangling with United Computer Software Rental Library, another California concern, which MicroPro asserts is illegally renting its programs for duplication. Although UCSRL claims it just isn't so, the suit grinds on in court.

Broderbund, a leading maker of games, has also become an industry policeman. The firm has begun using private investigators to run down pirates and file charges against those it catches in the act.

Bootleg Bulletins

"What really gets me," says Jerry Jewell, president of Sirius Software, "are the guys who are so open about it. Those are the pirates I'm going after." Jewell specifies those "guys" as bootleggers who run "underground bulletin board" operations. These illegal entrepreneurs act as a clearinghouse for pirated software by accepting orders for "broken" software by modem. All the buyer does is call up a pirates's list of the games available, enter his order and within 10 minutes the program is downloaded into the purchaser's computer. The pirate's payment is usually extracted via a follow-up bill, or by asking the buyer to leave a piece of software that he has pirated on the same bulletin board. [Ed note: a pirated program is the admission fee to join some Apple users groups, it has been rumored]

"These bulletin boards have got to go," says Jewell, "and starting this year we're going to get them. We're not going to say who we're going after first, but when we come down on them, everyone will know we mean business."

Jewell's decidedly bigilante attitude is heartily endorsed by other software makers frustrated by the lack of concrete action against the pirates. "There's plenty of legislation out there asserting our right to the programs," says Llewellyn. Among the most recent is the Apple win over Franklin Computer, which even protects computer programs lodged within computer circuits, a major victory for companies like Apple and IBM who want to curtail "knock-offs" or "imitations" of their hardware now flooding the market.

[We again wish to restate MACE's policy concerning software. Basically, if you didn't legitimately purchase it, don't bring it to our meetings. Don't submit it to our bulletin board sysops. And don't even think of getting it off our bulletin boards. We defend the software author and publisher's right to market their product without worrying about it's unauthorized spreading because of MACE. User groups internationally have earned a dubious reputation--that of pirating clubs, where the main topic of some meetings is how to crack protection schemes and what newly pirated software is available at the meeting. If you're looking for that kind of action, we suggest you will be better served elsewhere, far away from us. Good luck to you...better luck to the cops tracking you!]

BUILT FOR YOUR ATARI'S FUTURE...
AMDEK TOUGH!

Put the futuristic Amdek disk drive and 3″ diskette to work with your Atari® now. Get tomorrow's performance today. It's small...quiet...convenient to use...and "user tough." Competitively priced for use in the home, business or classroom.

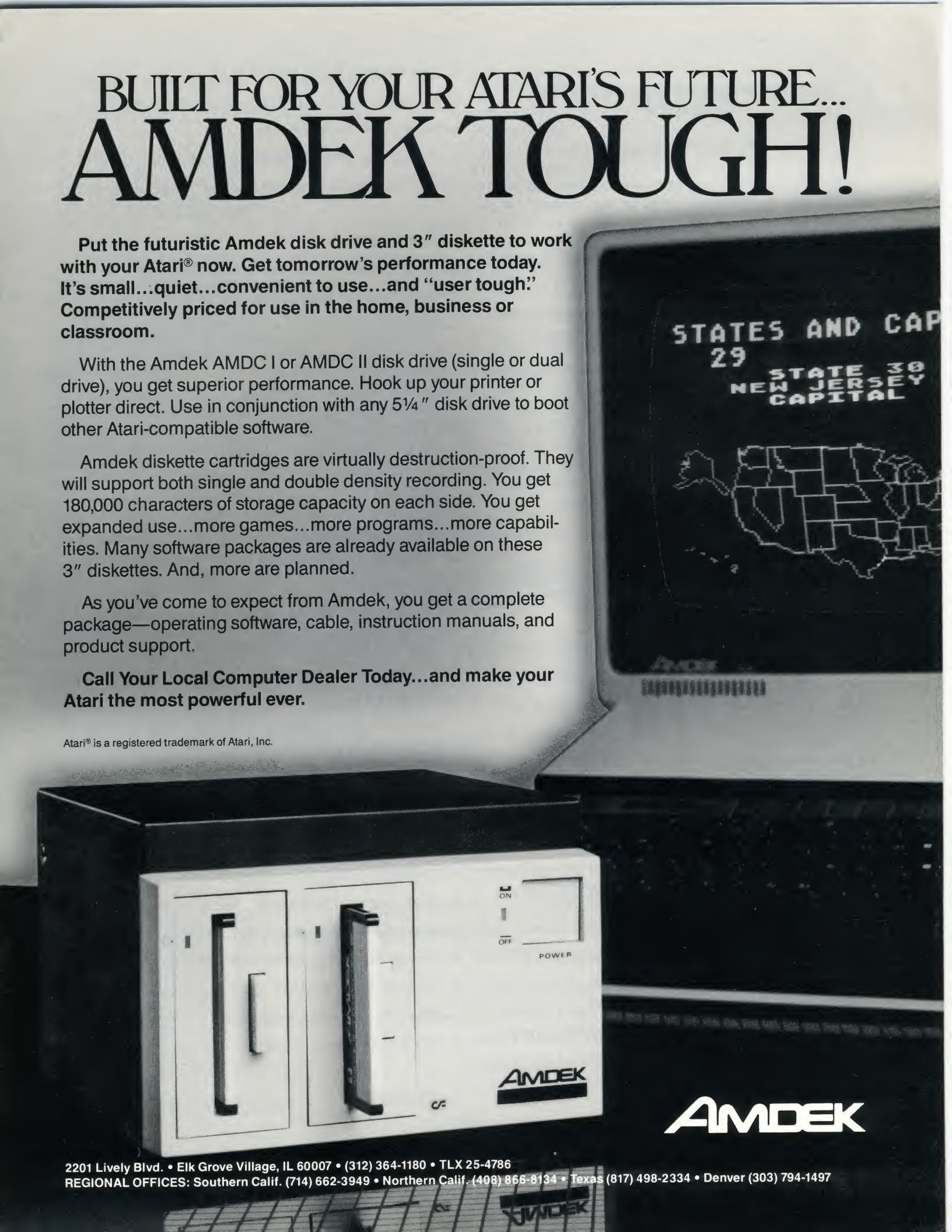
With the Amdek AMDC I or AMDC II disk drive (single or dual drive), you get superior performance. Hook up your printer or plotter direct. Use in conjunction with any 5¼″ disk drive to boot other Atari-compatible software.

Amdek diskette cartridges are virtually destruction-proof. They will support both single and double density recording. You get 180,000 characters of storage capacity on each side. You get expanded use...more games...more programs...more capabilities. Many software packages are already available on these 3″ diskettes. And, more are planned.

As you've come to expect from Amdek, you get a complete package—operating software, cable, instruction manuals, and product support.

Call Your Local Computer Dealer Today...and make your Atari the most powerful ever.

Atari® is a registered trademark of Atari, Inc.



2201 Lively Blvd. • Elk Grove Village, IL 60007 • (312) 364-1180 • TLX 25-4786
REGIONAL OFFICES: Southern Calif. (714) 662-3949 • Northern Calif. (408) 866-8134 • Texas (817) 498-2334 • Denver (303) 794-1497

BEGINNING WITH BASIC

By Bob Pettapiece

The following program and accompanying assignments have been used in my classes to teach begining BASIC programing to high school students for a few years. There is no one set of assignments that will teach BASIC best, but these seem to work well for most students.

This program can also serve as a self-teaching device for beginners and provides ways to teach simple math. My only regret about this approach to learning BASIC is the emphasis on math. I think that when people first learn programing in a math atmosphere, they may feeel that they must be a math whiz to be successful. With that possible shortcoming in mind, here is the program and the assignments:

THE PROGRAM

```
5 DIM A$(3):REM DIMENSION ATARI STRINGS
10 PRINT "THIS IS AN ADDITION GAME"
20 PRINT "ENTER A NUMBER"
30 INPUT A
40 PRINT "ENTER A SECOND NUMBER"
50 INPUT B
60 C=A+B
70 PRINT "WHAT IS THE SUM OF ";A;"+";B;"=?"
80 INPUT G
90 IF C=G THEN 120
100 PRINT "WRONG!! TRY AGAIN."
110 GOTO 70
120 PRINT "THAT'S RIGHT!!! WANT TO TRY AGAIN?"
130 INPUT A$(3)
140 IF A$="YES" THEN 20
150 PRINT "THAT'S ALL. GOOD-BYE!"
160 END
```

ASSIGNMENT 1

1. Enter THE PROGRAM and RUN it.
2. Change the program to an operation other than addition. [It might be suggested to try division or powers at this point.]
3. Add CHR$(125) to line 5 to clear the screen, it makes a neater program. Be sure to put a : between the 2 statements.
4. Debug the program and get it to run.
5. SAVE the new program.

ASSIGNMENT 2

1. LOAD in your program from Assignment 1.
2. RUN it to be sure there are no bugs in it.
3. Replace lines 20-50 with the following lines:

```
20 DATA 2,4,56,32,91,76
30 DATA -1,2,-4,-5,0,0
40 READ A,B
50 IF A=0 THEN 150
```

4. Also, change line 140 to go to line 40, not line 20.
5. RUN the program to understand how it works. Run the program at least once until it stops itself.
6. Change the program to another operation.
7. Debug & RUN the new program.

ASSIGNMENT 3

1. ReLOAD your program, debug if necessary.
2. Replace lines 20-50 with:

```
20 PRINT "LET ME PICK TWO NUMBERS"
30 FOR T=1 TO 2000:NEXT T
40 A=INT(25*RND(1)+1)
50 B=INT(10*RND(1)+1)
```

3. RUN the new program, debug it and try to understand what happens in lines 30-50.
4. Change the program to another operation.
5. Change 2000 in line 30 to various other numbers to see what happens.
6. SAVE your new program.

ASSIGNMENT 4

1. Reenter your program from Assignment 3.

2. Replace lines 20-40 with:

```
20 PRINT "WHAT IS YOUR NAME?"
25 INPUT N$
30 PRINT "HELLO ";N$;"."
40 A=INT(10*RND(1)+1)
```

3. Change line 5 to be:

5 DIM A$(3),N$(20):PRINT CHR$(125)

4. Change line 120 to:

20 PRINT "THAT'S RIGHT ";N$;"! WANT TO TRY AGAIN?"

5. Add these lines:

125 N=N+1

135 PRINT "YOU HAVE ANSWERED ";N;" PROBLEMS CORRECTLY."

6. Change line 140 to ...THEN 40.

7. RUN the program & debug it if necessary.

8. Change the program to do multiplication or subtraction.

9. Add a personal touch, N$, to the wrong responses.

10. Add a counter, like N=N+1 for the wrong responses.

11. RUN, debug and SAVE your program.

ASSIGNMENT 5

1. LOAD your program from Assignment 4, RUN & debug it.

2. MAke the following changes to the program:

```
120 GOSUB 200
128 PRINT "WANT TO TRY AGAIN?"
200 X=INT(5*RND(1)+1)
210 IF X=1 THEN 300
220 IF X=2 THEN 320
230 IF X=3 THEN 340
240 IF X=4 THEN 360
250 IF X=5 THEN 380
300 PRINT "GOOD WORK, ";N$
310 RETURN
320 PRINT "FANTASTIC, ";N$
330 RETURN
340 PRINT "YOU ARE GETTING THE IDEA, ";N$
350 RETURN
360 PRINT "YOU ARE HOT, ";N$
370 RETURN
380 PRINT "THAT IS CORRECT, ";N$
390 RETURN
```

3. Debug & RUN the new program.

4. Change the program to a different operation, and

5. Put in comments for wrong answers, similar to lines 300-390.

NOTES

1. If you have not discovered by now, you may use ? for PRINT in those lines that have a PRINT statement.

2. If you do not understand RND(1), type ? RND(1) and hit the RETURN key to see the result.

3. Also, try ? INT(10*RND(1)) a few times to see the resulting random numbers.

4. The last step in every assignment in the classroom is to show it to the teacher. This is important, because sometimes students forge ahead without really finishing an assignment.

5. The Atari can use ?, ", ESC, shift-CLEAR (these are the key strokes) at the beginning of a PRINT statement instead of CHR$(125) to clear the screen.

6. BASIC commands, like RUN, are capitalized in the directions.

6. Within the " " of a PRINT statement you may choose to use U/L case for better readability.

CHANGES IN MEETING DATES

Due to scheduling conflicts with the City of Southfield, the meeting dates for MAY and JUNE have been rescheduled. The following is a list of meeting dates for the remainder of 1984.

** May 29 **
** June 11 **
July 17
August 21
September 18
October 16
November 20
December 18

** TARICON '84 - August 25 & 26 **

Please mark your calendars so you'll be sure not to miss meeting night.

Tom Sturza
Program Coordinator

COMING ATTRACTIONS May 29th. Meeting

Here's the tentative schedule of topics for the May Birthday meeting. Please note that this meeting is on the 5th. Tuesday of the month.

*** M.A.C.E. BIRTHDAY PARTY ***

- Business meeting
- Bank Street Writer demo
- Misc. software demos by Jim Croke of Hawthorne Marketing
- Free refreshments!!
- Door prizes!! Bring your membership card in order to get into this meeting
- plus a special birthday present

Come celebrate our birthday with us! Be sure to bring your membership card for admission.

Tom Sturza
Program Coordinator

MAXARON HOME ENTERTAINMENT (313) 758-7884
22932 VAN DYKE • WARREN • MI • 48089

ATARI COMPUTER COMPATIBLE PRODUCTS TOP SELLERS: OPEN 7 DAYS!

UTILITIES

Basic XL (D)	$ 60.40

BUSINESS

Visicalc (D)	$161.97

HARDWARE/ACCESSORIES

Atari-1010 Program Recorder	$ 71.40
Atari-1027 Letter Quality Printe	$270.90
Atari-1050 Dual Den.Disk Drive	$336.00
Indus GT Disk Drive	$316.72
Koala Touch Tablet	$ 65.97
Rana Mod#1000 Disk Drive	$291.17
The Boss Joystick	$ 12.00

HOME

Atari Writer (C)	$ 66.15
Bank Street Writer (D)	$ 42.97
S.A.M. (D)	$ 36.97
The Home Accountant (D)	$ 45.97

EDUCATIONAL

Alphabet Zoo (C)	$ 21.97
Early Games Music (D)	$ 18.97
Facemaker (C)	$ 21.97
Kindercomp (D)	$ 18.95
Master Type (C)	$ 24.97
The Most Amazing Thing(D)	$ 24.97
Trains (D)	$ 24.97
Type Attack! (D)	$ 24.97

OFFICIAL ATARI HEADQUARTERS



CALL FOR COMPLETE FREE PRICELIST

RECREATIONAL

"Night Mission" Pinball (D,T)	$ 18.97
Blue Max (D,T)	$ 21.97
Boulder Dash (D)	$ 18.97
Castle Wolfenstein (D)	$ 18.97
Centipede (C)	$ 29.00
Choplifter (D)	$ 21.97
Deadline (D)	$ 30.97
Dig-Dug (C)	$ 28.80
Dimension X (D,T)	$ 21.97
Donkey Kong (C)	$ 33.00
Enchanter (D)	$ 30.97
Frogger (D,T)	$ 21.97
Lode Runner (D)	$ 21.97
Millionaire (D)	$ 36.97
Pac-Man (C)	$ 28.80
Pitstop (C)	$ 25.00
Quest for Tires (D)	$ 21.97
Sargon-2 (T)	$ 18.97
Telengard (D)	$ 17.80
Temple of Apshai (D,T)	$ 25.00
Ultima-3 (D)	$ 33.97
Zaxxon (D,T)	$ 24.97
Zork-1 (D)	$ 24.97
Zork-2 (D)	$ 24.97
Zork-3 (D)	$ 24.97

BEGINNERS CORNER

A COMPENDUM OF TIMESAVERS, PEEKS, POKES, AND OTHER GENERALLY USEFUL ODDS AND ENDS

DOS FUNCTIONS FROM BASIC

Using the following routines, it is possible to access certain DOS file management functions from a running BASIC program. The following routines will access LOCK/UNLOCK, RENAME, DELETE, and FORMAT.

The command format is:

XIO #n,device,0,0,"filename" where:

#n - a particular XIO command
iocb - the channel being used (1-5)
device - D1:-D4:,P:,E:,S:,R:, or C:
filename - your filename

For example to DELETE a file called MYFILE.BAS:

XIO 33,#1,0,0,"D:MYFILE.BAS"

To RENAME a file:

XIO 32, #1,0,0,"D:OLDNAME,D:NEWNAME"

To UNLOCK a file on drive 2:

XIO 36,#1,0,0,"D2:filename"

Note that "wildcards" will work the same as in DOS. For example to lock all files on drive one:

XIO 35,#1,0,0,"D:*.*

To FORMAT a disk:

XIO 254, #1,0,0,"D:1" (or D2:)

Be advised that commands like FORMAT or DELETE do NOT ask you to verify the operation. When you issue this command...BAM! it's done. So be sure you have the right disk in the right drive!

There are other XIO commands for GETTING and PUTTING data, as well as to OPEN and CLOSE files. See your reference manual for further information on this very handy Atari function. Following are the XIO commands to perform basic file functions:

DELETE - XIO 33
LOCK - XIO 35
UNLOCK - XIO 36
RENAME - XIO 32
FORMAT - XIO 254

DISABLE YOUR BREAK

POKE 16,64:POKE 53774,64 will make your BREAK key inoperative.

A GRAPHICS command will cancel this out, so you may have to call this as a subroutine after any GRAPHICS command.

READING YOUR CONSOLE SWITCHES

The console switches on your Atari may be read by PEEKING location 53279. Doing this will return a value which will tell you what key or keys if ay are being pressed. The following values may be returned when this location is PEEKED. The syntax is KEY=PEEK(53279).

PEEK(53279)=

0 - START/OPTON/SELECT pressed
1 - OPTION/SELECT pressed
2 - OPTION/START pressed
3 - OPTION pressed
4 - SELECT/START pressed
5 - SELECT pressed
6 - START pressed
7 - NO console key pressed

If you POKE 53279,0 you will get a click from your keybpard speaker. Handy if you require a click.

RE-RUN A BASIC PROGRAM IF THE RESET KEY IS PRESSED

Try this routine to make your BASIC program "reset-proof":

```
10 POKE 2,95:POKE 3,169:POKE 9,2:TRAP 30
20 GOTO 50
30 RUN
40 REM
50 REM START OF BASIC PROGRAM
```

Note: I am not sure this routine is perfectly legal, but you can try it and if it works...fine!

GOTO/GOSUB

By Paul Wheeler

I like to insert this little one-liner in the programs I am writing, debugging or just plain revising. It saves time, chance of error and the need to remember the EXACT filename of the program.

To use this little routine, just give it a line number (ie. 30000) and then type GOTO 30000. You will be prompted with a message to press the RETURN key. Do this ad Wa-lah...you program will be saved to disk!

Of course, you could change the D: to a C: for tape or SAVE to LIST for an ATASCII save.

```
30000 GR.0:?:?"-----...Just press
 RETURN to:?"SAVE ";CHR$(34)
;"D:FILENAME.EXT":POKE 84,0:END
```


GEORGE HICKMAN ELECTRIC

24 HOUR SERVICE

- Complete Rewiring
- Outdoor Lighting
- Air Conditioner Wiring

Residential

Industrial • Commercial

772-1982
776-4750

Licensed • Insured

ONE MOMENT PLEASE!

Won't you take a moment right now and take a look at the mailing lable? You know, the one on the back cover. Notice that date in the upper right-hand corner? It's your membership expiration date. If it is close, then renew it now, either by mail or at the next general meeting, to avoid interruption of your membership. Also look at the name and address for any typo's and let me know so corrections can be made. Your help in this area will be appreciated!

If you plan on a change in address, try to get the info to us so our files can be updated at the earliest possible date.

Thanks alot folks!
Paul R. Wheeler
Membership Coordinator

N & T COMPUTING

N & T

BUSINESS, EDUCATIONAL AND PERSONAL
SOFTWARE AND COMPUTER SALES



Ike Hudson
(517) 351-3092
519 Linden
E. Lansing, MI 48823

John Clark
(313) 835-4924
CALL
Detroit, MI 48228

ATARI 800XL	$290.00
ATR8000 64K	$440.00
DT-80 CARTRIDGE	$ 30.00
DT-80 GIVES YOU 80 COLUMNS WHILE RUNNING CP/M SOFTWARE	
INDUS GT	$360.00
RANA 1000	$335.00
$5.00 OFF TO MACE MEMBERS WHO MENTION THIS AD	
SSDD Disks 10 FOR	$ 15.00

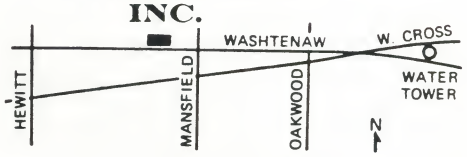
RWE RITE WAY

CASH REGISTERS • COMPUTERS

STORE NO. 4

YPSILANTI

RITE WAY ENTERPRISES INC.



YOUR ONE STOP MARKETPLACE FOR ALL YOUR COMPUTER NEEDS.



IBM Compatibles

SAVE BIG ON ALL

SOFTWARE & HARDWARE

MONITORS
DISK DRIVES
PRINTERS
SOFTWARE
MODEMS
COMPUTER PAPER



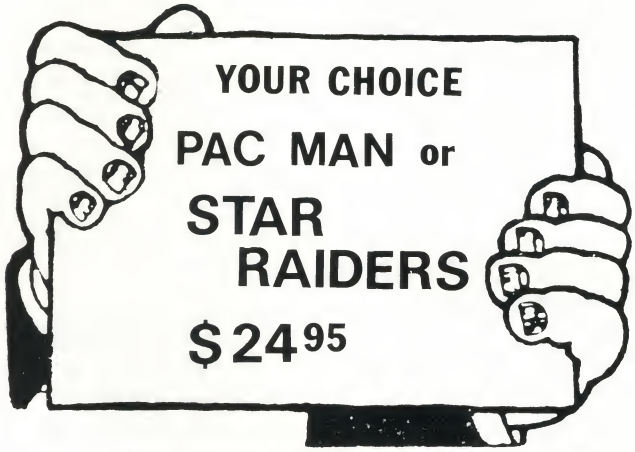


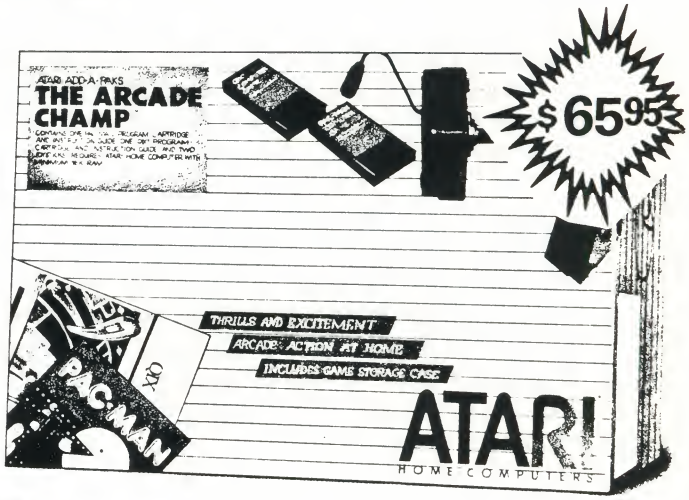
SOFTWARE & HARDWARE FOR

ATARI APPLE Commodore IBM



INDUS GT™





OPEN MONDAY THRU FRIDAY 10-9, SATURDAY 10-6

RITE WAY ENTERPRISES INC.

COMPUTERS •SOFTWARE •CASH REGISTERS
SALES •SERVICE •SUPPLIES

ATARI ATARI SERVICE FACTORY AUTHORIZED NETWORK

(313) 751-2454	(313) 562-3178	(313) 559-2980	(313) 483-5410
8262 12 MILE RD.	22027 MICHIGAN AVE.	19783 12 MILE RD.	1514 WASHTENAW
WARREN, MI. 48093	DEARBORN, MI. 48124	SOUTHFIELD, MI. 48076	YPSILANTI, MI. 48197

MasterCard VISA

POLAR COORDINATES

By Carl Stebner

Many students are familiar with the Cartesian, or rectangular, coordinate system. The Cartesian coordinate system is based on two perpendicular lines drawn in a plane. The horizontal line is usually called the X-axis, and the vertical line the y-axis. The lines intersect at point O, called the origin. By assigning numerical values to arbritrary lengths along both lines, any point in the plane can be defined by a set of numbers (X,Y). Lines, or curves in the plane, can, therefore, be defined by an algebraic formula. For example, a straight line can be described as Y=AX+B, where A and B are numerical constants.

However, how many of us are familiar with the Polar coordinate system? In the Polar coordinate system, we attempt to define any point in a plane by a set of numbers, but in a different fashion. A horizontal line, called the polar axis, is drawn to the right of a point in the plane, an origin point, or pole. Rotate the line about the pole. The polar axis sweeps through varying angles, usually designated by the greek letter theta. With the original horizontal line designated zero degrees, counter-clockwise rotation to the vertical would be 90 degrees, to the left of the pole 180 degrees, and so on, back to the original line or 360 degrees. Therefore, by knowing how far the line needs to be rotated from zero degrees (TH) and how far along the line from the pole any point on the plane is (an arbritrary distance, R), any point (P) on the plane can be located, P(R,TH).

Polar coordinate graph paper can be obtained commerciallly and looks like a series of radiating lines, like the spokes on a wheel, and a series of concentric circles around a central point or pole. Imagine looking down on the North Pole on a globe, the circles being the latitude lines, and the radius lines the longitude lines.

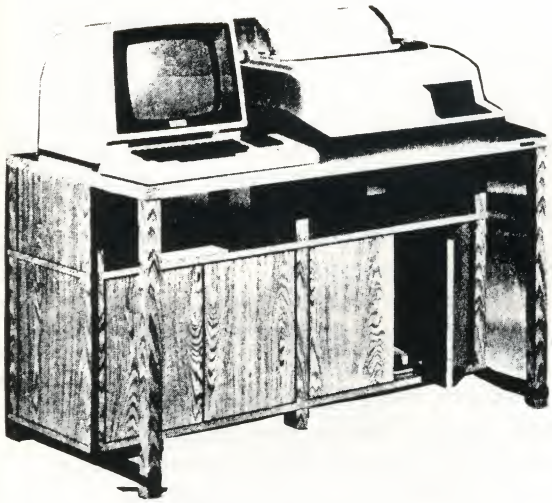
Similarly, equations can be written in polar form. Usually these equations contain trigonometric terms as one of the coordinates is defined by an angle. Also, equations can be converted from one coordinate system to the other. For example, the equation of a straight line in Cartesian coordinate Y=AX+B, where A and B are constants, could be written R*sin(TH)=A*R*cos(TH)+B. Other interesting geometric curves can be drawn from polar equations. The following programs plot several different polar equations.

In order to plot the equation with your graphics, it is easier to convert the polar coordintates to rectangular coordinates. Some of these curves have special names, as you will see in the REM statements in each program. Since sine and cosine functions are less than one, a multiplier or constant needs to be added in order to expand the plot on the video screen in order to see it better. The formulas plotted by the three programs are: 1)the Spiral of Archimedes, R=A*TH, where R is the distance along the polar axis, TH the angle theta, and A any constant, 2)the Three-Leaved Rose R=A*sin3(TH), 3)the Lemniscate of Bernoulli, R^2=(A^2)*cos2(TH).

Try the following formulas: the Four-Leaved Rose. R=A*cos2(TH), a circle, R=A*cos(TH) or the hyperbolic spiral, R=A/(TH).

```
5 REM SPIRAL OF ARCHIMEDES
10 GRAPHICS 6
20 COLOR 1
30 SETCOLOR 0,8,8
40 FOR TH=0 TO 360
45 R=TH*0.5
50 A=TH*(3.1416/180)
60 X=A*COS(A)*10
70 Y=A*SIN(A)*10
80 X=80+X
90 Y=25-Y
95 PRINT TH,R
100 PLOT X,Y
110 NEXT TH
120 END
```

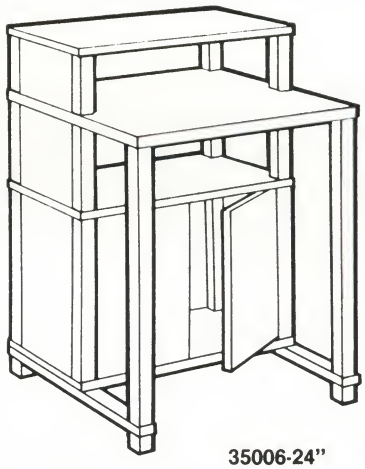
```
5 REM THREE LEAVED ROSE
10 GRAPHICS 7
20 COLOR 1
25 SETCOLOR 0,4,4
30 PLOT 0,35
40 DRAWTO 158,35
50 PLOT 76,0
60 DRAWTO 76,76
70 FOR TH=0 TO 360
80 R=SIN(3*TH)
90 X=R*COS(TH)*40
100 Y=R*SIN(TH)*40
110 X=X+76
120 Y=35-Y
124 PRINT TH,R
130 COLOR 2
135 SETCOLOR 2,8,4
140 PLOT X,Y
150 NEXT TH
160 END
```



$120.95

save$20

3500I H 27 W 48 D 24



$75.95

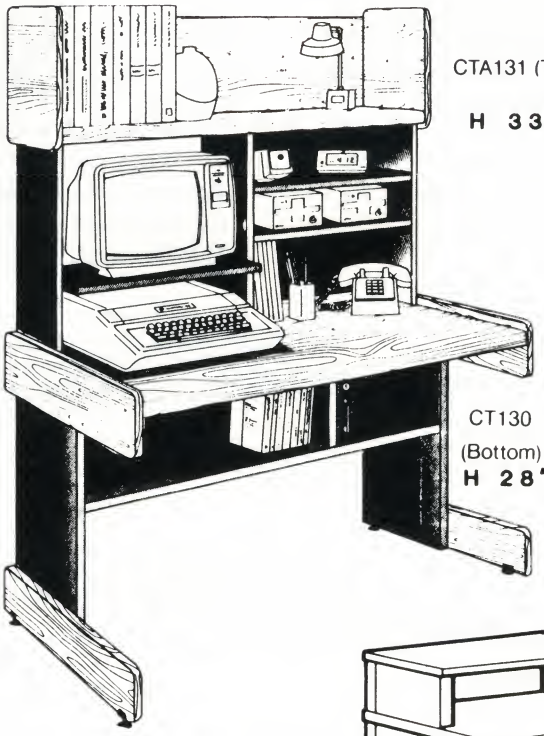
save $15

35006-24" H 33 W 24 D 24

ONLY

$175.95

SAVE $15



CTA131 (Top)

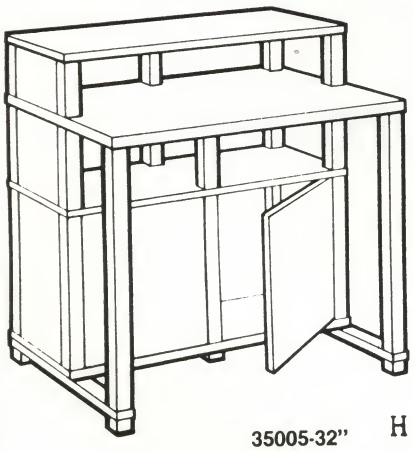
H 33" W 45" D 11"

CT130

(Bottom)

H 28" W 45" D 29

Bush



$99.95

save $15

35005-32" H 33 W 32 D 24



$99.95

save $15

35004-36"

H33 W 36 D 24

West Side Radio

7521 Wyoming , Dearborn (1 block north of warren)

WEEKDAYS 9:00 - 5:30 SATURDAY 9:00 - 3:00

AMDEK-MACE GROUP PURCHASE

If you are interested in getting a state-of-the-art piece of equipment through MACE, then read on! The AMDISK III 3" Disk Drive and Controller that was demonstrated at our March meeting is being made available by Amdek at drastically reduced costs.

As announced at the meeting, the special prices being offered to MACE MEMBERS are as follows:
SINGLE DRIVE(AMDC-I) $450 ($100 off)
DOUBLE DRIVE(AMDC-II) $650 ($110 off)
This drive is compatible with single, double and dual(Atari 1050) densities. DOS XL, version 2.3 is provided, and a double density patch for Atari DOS 2.0 is also included. This sleekly styled drive has full compatibility with all 400/800/XL Atari computers, and features a parallel printer/plotter port, and is both hardware and software configurable to any of the densities.

Along with the printer port and the standard Atari serial ports, the AMDC has a connector port for add on disk drives. These drives need not be Atari drives, as the AMDC controller will handle them! All Amdek disks are reversible, meaning as much as 360K available on each diskette. The AMDC is capable of controlling up to 4 disk drives, and, all in all, a great addition to your system.

Keep in mind we must have 20 orders to assure Amdek's special deal to us. Final order date is May 1, 1984, and payment in full is due on that date. We cannot process any orders after that date. Please mail above specified amount in the form of a check to:
MACE-Michigan Atari Computer Enthusiasts
P O BOX 2785
Southfield, MI 48037
As a special deal Amdek will throw in for an additional $50 Broderbund's CHOPLIFTER, and LJK's DATA PERFECT as a bonus. All shipping and handling fees will be covered by Amdek, and final shipping arrangements will be handled by Amdek. Limit one drive per MACE family, and NO sales to dealers, please!

SOFTWARE TRENDS
230 MAIN
P.O. BOX 249
CLAWSON, MI 48017
(313) 288-3280

two blocks south of 14 Mile Rd.

DATE | NUMBER

TO: MACE MEMBERS

HOURS: MON-WED,SAT 10-6
hours: THUR,FRI 10-9
HOURS: SUNDAY 1-5

20% off SPINNAKER software

20% off ELECTRONIC ARTS software

BUSH computer furniture at low, low prices

additional 5% off with your MACE card

SOFTWARE TRENDS: Keeping pace with your business, personal, educational and recreational software needs

M. A. C. E.

MICHIGAN ATARI COMPUTER ENTHUSIASTS

P.O. Box 2785; Southfield, Mi. 48037

BULLETIN BOARDS: MAIN 978-1685/WEST 582-0657
MACE/TARICON HOTLINE: INFO (voice) 978-2458

PRESIDENT
Michael Lechkun
32229 Ruehle
Warren, MI 48093
978-2458(CompuServe:70655,645)
978-8432

VICE-PRESIDENT
Wallace Duvall
15579 Chestnut
Roseville, Mi. 48066
772-1982

TREASURER
Ken Kirkman
14125 Riverside Dr.
Livonia, Mi. 48154
525-0516

CORRESPONDING SECRETARY
Jane Simon
2345 Pinecrest
Ferndale, Mi. 48220
399-1694 (CompuServe: 74065,1545)

RECORDING SECRETARY
Barbara J. Franczyk
Brighton, Michigan 48116
231-2531

PROGRAM COORDINATOR
Thomas Sturza
18684 Purlingbrook
Livonia, Mi. 48152
477-2345

DISK LIBRARIAN
Chet Gonterman
35088 Savannah Lane
Farmington Hills, Mi. 48018
553-7443

CASSETTE LIBRARIAN
James Phillips
40008 Cambridge, Bldg 23-Apt 103
Canton Township, Mi. 48187
981-1523

MEMBERSHIP CHAIRMAN
Paul Wheeler
14842 Fielding
Detroit, Mi. 48223
538-3649

M.A.C.E. JOURNAL EDITOR
Marshall S. Dubin
3237 Doral Drive
Rochester, Michigan 48063
(313) 375-9047

NEXT MEETING: 5/29/84--7:00 PM
Southfield Pavillion - Ten & A Half Mile Road & Evergreen

M.A.C.E.
P.O Box 2785
Southfield, MI 48037

$20.00* FOR A ONE YEAR MEMBERSHIP
(*Payable to M.A.C.E.)

M.A.C.E. MEMBERSHIP APPLICATION

Name _____ Phone _____
Street _____
City _____ State _____ Zip Code _____
Company (if applicable) _____
System Description _____ Disk/Tape _____
Suggestions _____
I can help with . . . _____

()New ()Renewal
If a Renewal:
MACE #_____

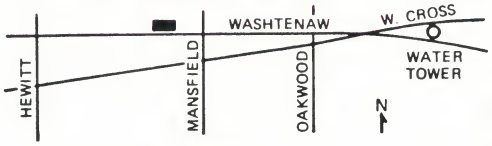
Date _____ Coupon _____
Amount _____ Membership Card Number _____
☐ Cash
☐ Check Number
Expires _____

OPEN MONDAY THRU FRIDAY 10-9, SATURDAY 10-6

RWE RITE WAY STORE NO. 4

CASH REGISTERS • COMPUTERS

THOUSANDS OF SOFTWARE PROGRAMS IN STOCK!



(313) 751-2454
• 8262 12 MILE RD.
WARREN, MI. 48093

(313) 562-3178
• 22027 MICHIGAN AVE.
DEARBORN, MI. 48124

(313) 559-2980
• 19783 12 MILE RD.
SOUTHFIELD, MI. 48076

(313) 483-5410
• 1514 WASHTENAW
YPSILANTI, MI. 48197

SAVE BIG
ON ALL
SOFTWARE & HARDWARE

MONITORS
DISK DRIVES
PRINTERS
SOFTWARE
MODEMS
COMPUTER PAPER

HIGH PERFORMANCE FLOPPY DISK

$1.49

5¼" Diskettes for popular personal computers.

MICHIGAN ATARI COMPUTER ENTHUSIASTS
P.O. BOX 2785
SOUTHFIELD, MICHIGAN 48037

BULK RATE
U.S. POSTAGE
PAID
PERMIT #431
SOUTHFIELD, MI

01/85

IMPORTANT DATED MATERIAL

PLEASE DO NOT DELAY

Printing and Bindery Services by • GRAPHIC ENTERPRISES, INC. Detroit, Michigan • 313-839-6800